XML as Part of a Total Information Management Strategy for STI

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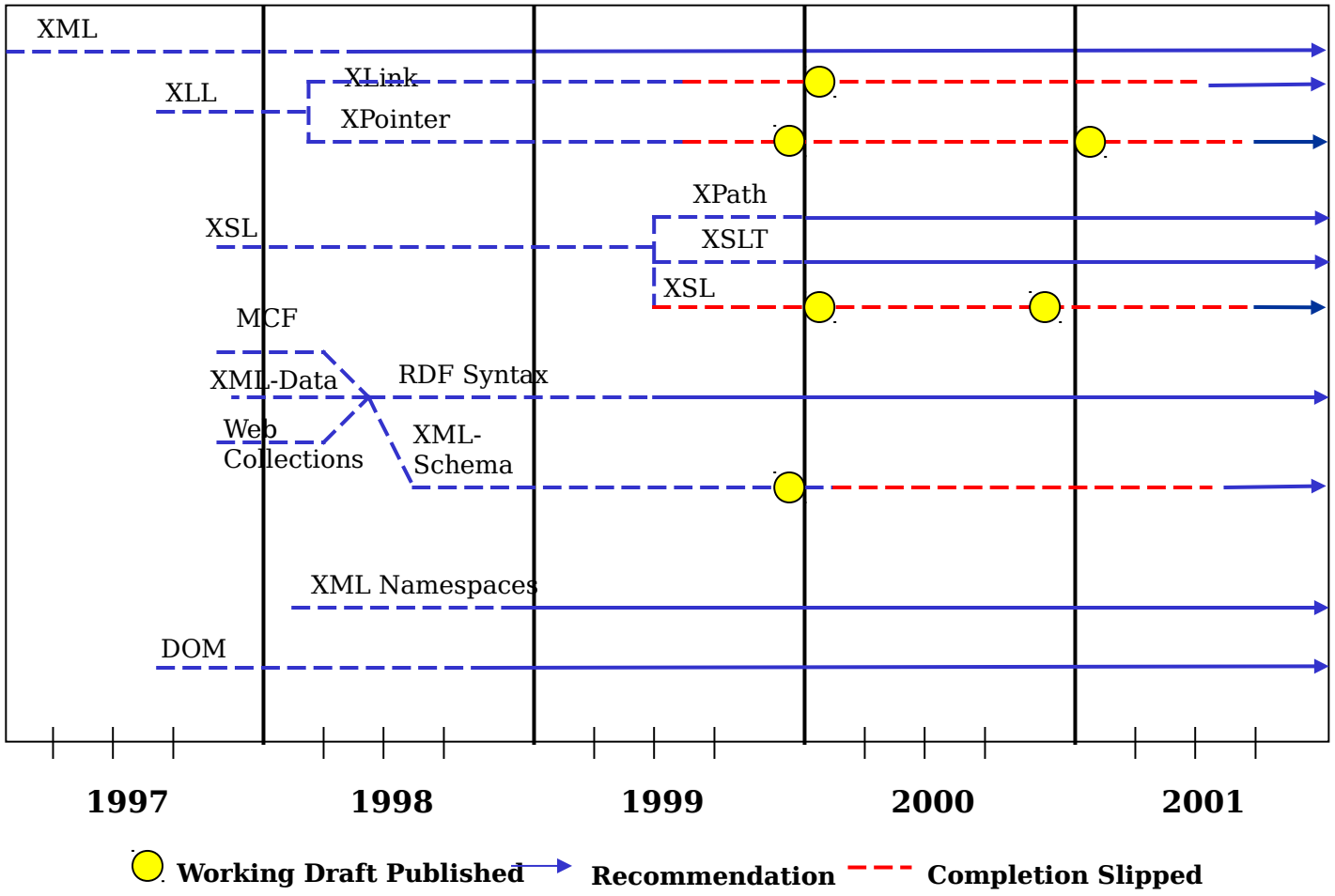
Agenda

- Introduction
  - XML Core Standards
  - Domain Specific XML-Based Standards
- XML As An Information Management Strategy
- NLM XML Applications
- Implementation Approach
- Lessons Learned
- Questions & Answers

XML Core Standards (I)



XML Core Standards (II)

- Extensible Markup Language (XML) – the foundation specification that defines the character set and rules for constructing XML element names, attributes and structures
- XML Linking Language (XLink) to provide links and link management among content components
- XML Pointer Language (XPointer) to reference content components, which may be identified with XML entities
- Extensible Stylesheet Language (XSL) to associate presentation characteristics (e.g., layout) with XML markup
- XSL Transformations (XSLT) to control views of XML documents and ordering of XML elements
- XML Path Language (XPath) for referencing of both labeled (e.g., <element_name>) and unlabeled content components of XML documents, used by XSLT and XPointer

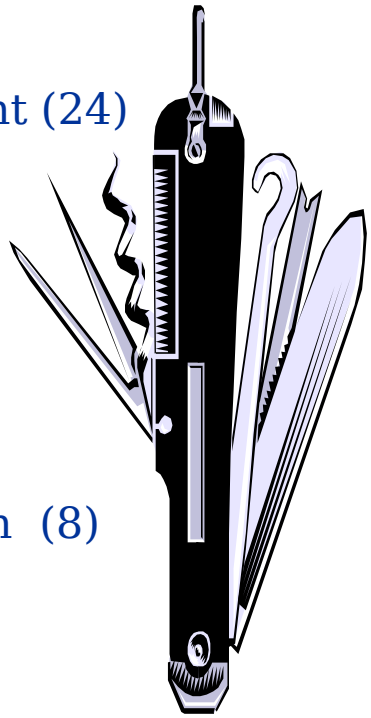
XML Core Standards (III)

- Resource Description Framework (RDF) for metadata exchange among applications — it defines Web resources, their properties and values of those properties
- XML Schema defines XML data structures with data specification and data typing information, something not included in the older document type definitions (DTDs) for XML structures
- XML Namespaces determines the interpretation of specific element and attribute names (i.e., strings) by associating them with referenced dictionaries (namespaces)
- Document Object Model (DOM) is a standard set of programmatic calls — i.e., application programming interfaces (APIs) — for building, navigating, identifying and reading/writing to identifiable components (i.e., elements or attributes) of XML documents (i.e., data structures)

Domain Specific XML-Based Standards

1000+ domain specific XML-based standards are developed & registered in XML.ORG (OASIS) currently

- Accounting (14)
- Advertising (6)
- Aerospace (17)
- Arts/Entertainment (24)
- Astronomy (14)
- Automotive (14)
- Banking (10)
- Biology (8)
- Computer (9)
- Construction (8)
- Consulting (20)
- Customer Relation (8)
- Databases (10)
- E-Commerce (60)
- EDI (18)
- Education (51)
- Energy/Utilities (33)



- Financial Service (52)
- Healthcare (23)
- Human Resources (23)
- Internet/Web (35)
- Legal (10)
- Literature (14)
- Manufacturing (8)
- Multimedia (24)
- News (10)
- Publishing/Print (28)
- Real Estate (15)
- Retail (6)
- Science (61)
- Software (124)
- Supply Chain (23)
- Telecommunications (23)
- XML Technologies (232)

The Challenge

We are moving to Electronic Business…

Our data (documents) is distributed…

Our users are distributed…

But where is the common denominator?

A Viable Solution

XML is a viable option
o manage the diversity of data, applications and devic
of Electronic Information Applications

XML As An Information Management Strategy

Collecting Electronic Informa

Authoring Electronic Inforr

Storing Electronic Information

Publishing Electronic Information

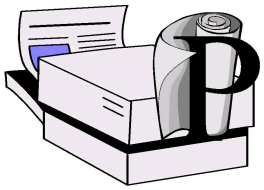
Exchanging Electronic Informati

Retrieving Electronic Informat

Collection Electronic Information

Keyboard Contractors

XML



Publishers

XML

OCR

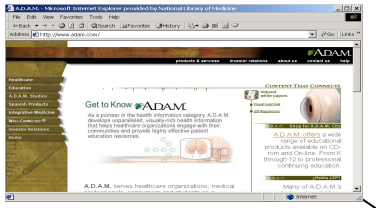
XML

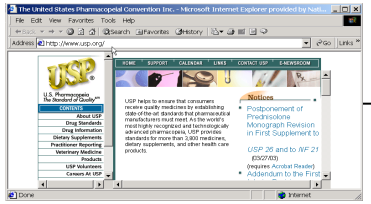
XML Loader

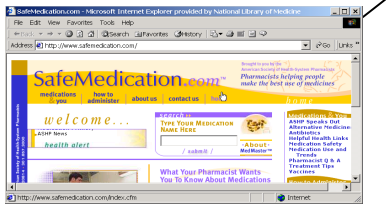
MEDLINE Database

- XML
- XSL
- XSLT
- XML Schema

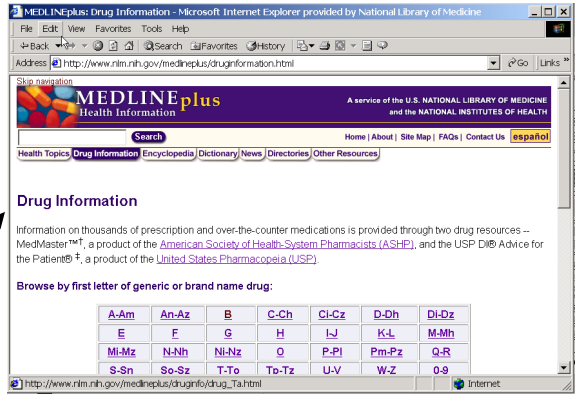
Authoring Electronic Information

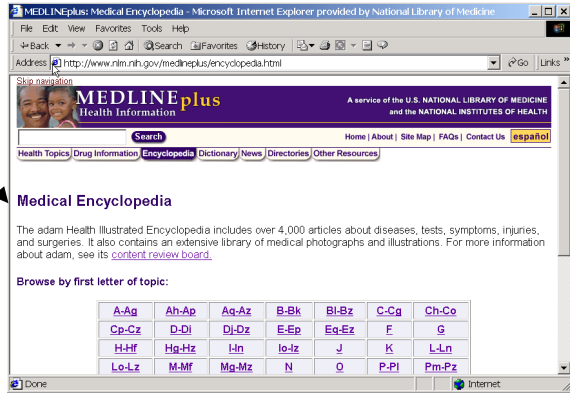






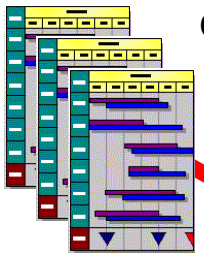
XML Loader



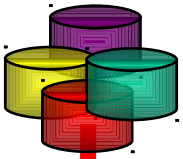


- XML
- XSL
- XSLT
- DOM
- XML Schema

Storing Electronic Information



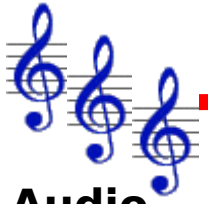
Project data



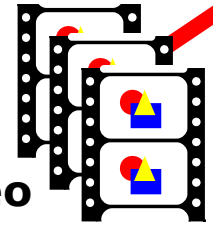
Existing Databases

Text Documents

www.nlm.gov

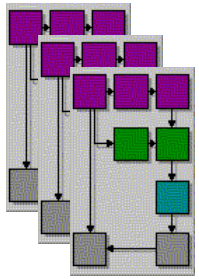


Audio



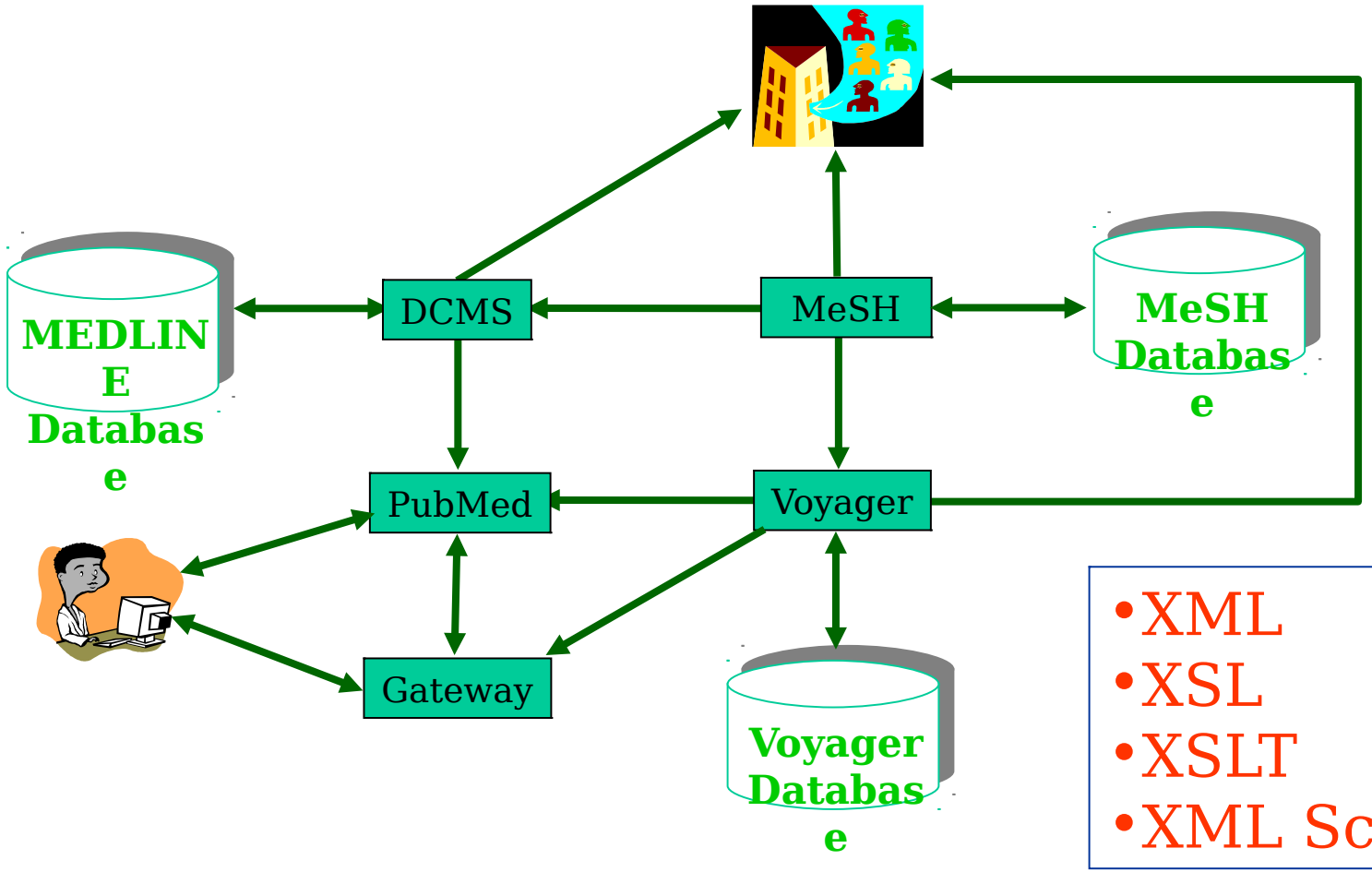
Video

Images



Process descriptions

Publishing Electronic Information



- XML
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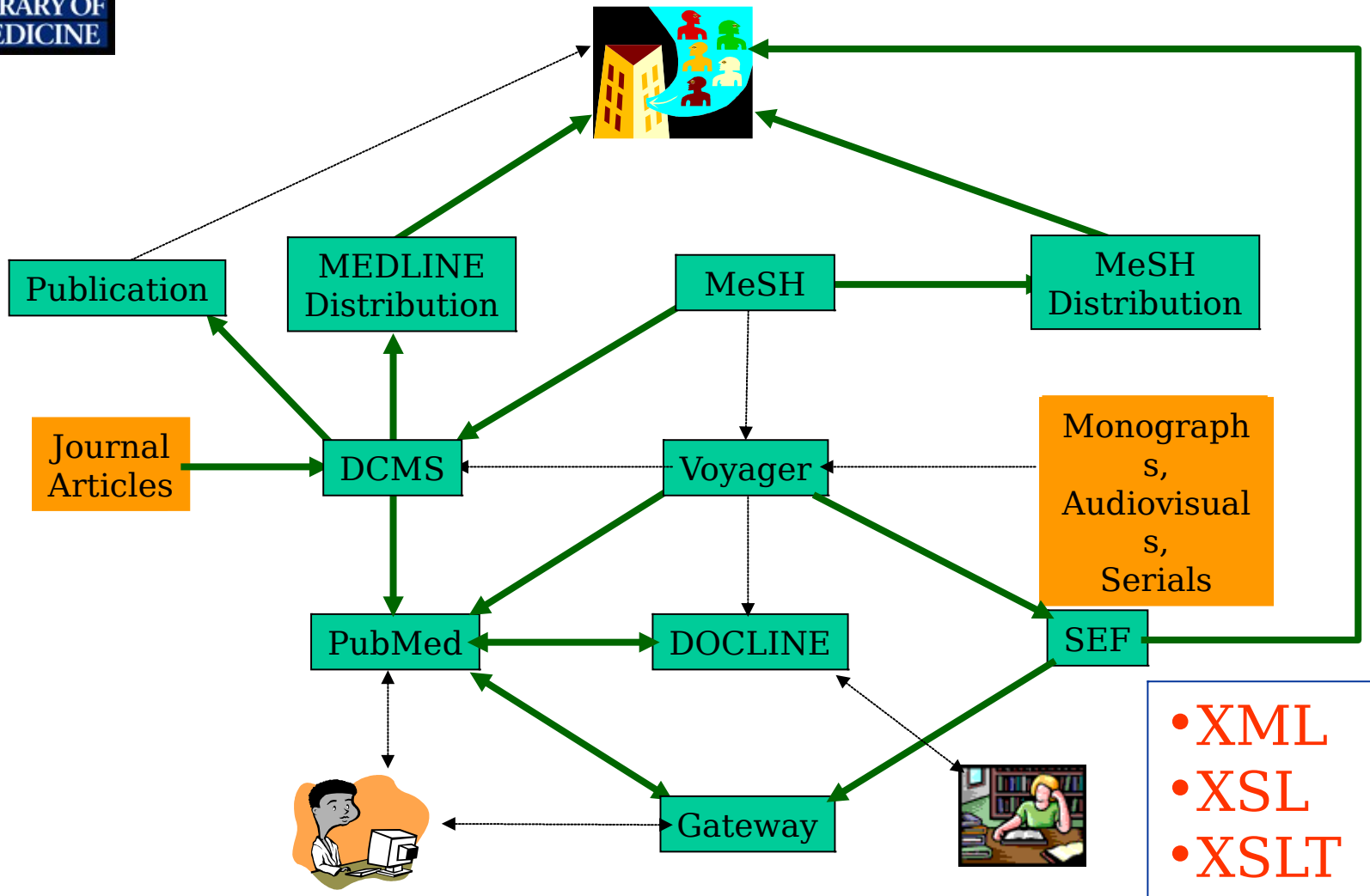
- XML Schema

Exchanging Electronic Information



- XML
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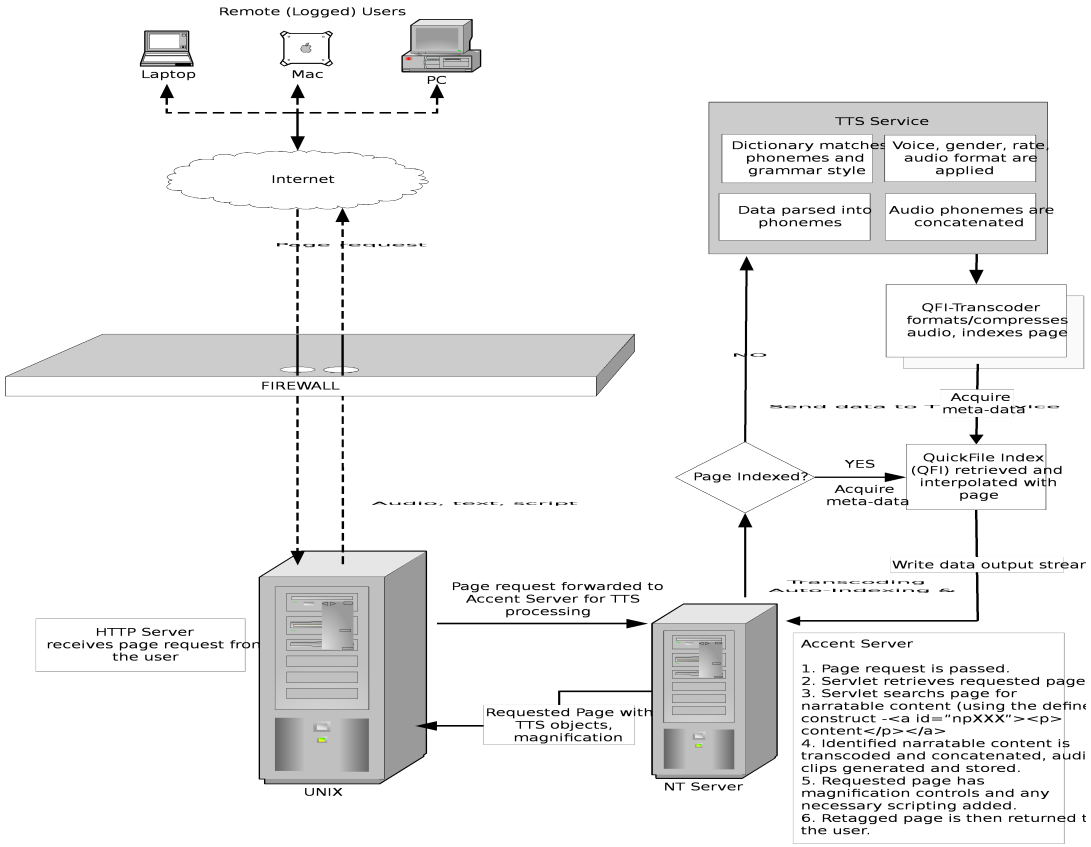
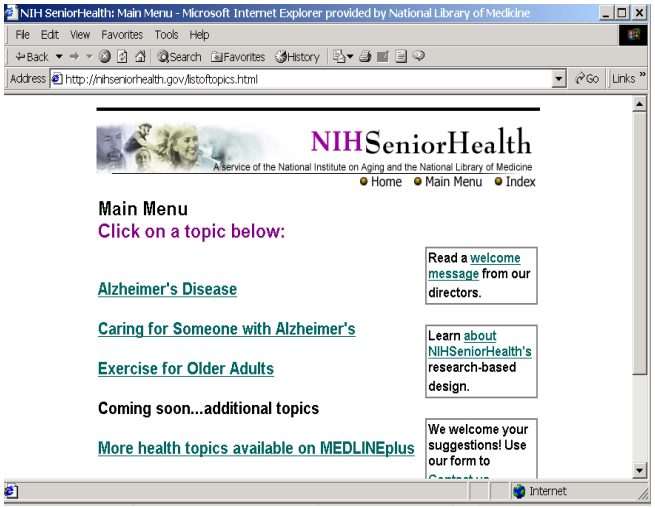
Retrieving Electronic Information




NIH SeniorHealth: Main Menu - Microsoft Internet Explorer provided by National Library of Medicine
File Edit View Favorites Tools Help
Address http://nihseniorhealth.gov/listoftopics.html
NIHSeniorHealth
A service of the National Institute on Aging and the National Library of Medicine
Home Main Menu Index
Main Menu
Click on a topic below:
Alzheimer's Disease
Caring for Someone with Alzheimer's
Exercise for Older Adults
Coming soon...additional topics
More health topics available on MEDLINEplus
Read a welcome message from our directors.
Learn about NIHSeniorHealth's research-based design.
We welcome your suggestions! Use our form to
Internet

- XSL/XSLT
- Voice

XML

- DOM
- SOAP
- SALT

Implementation Approach

- Form joint XML committees/working groups
- Provide XML education
- Build an XML community
- Cooperate with partners
- Participate in standard organizations
- Assume the leadership
- Start from core XML then to domain specific XML-based standards
- Apply XML to both research **&** operation projects

Lessons Learned

- Take a broad & holistic approach
- Commit for the long haul
- Understand the core standards
- Keep abreast of domain specific standard development
- Don’t do it all at once
- Don’t go it alone
- Include security in the process

Q&A